CHAPTER 9
GLOSSARY

50 percent atmospheric conditions	Atmospheric conditions that are not exceeded 50 percent of the time and provide a realistic estimate of the likely atmospheric conditions that would exist during an accident.
95 percent atmospheric conditions	Atmospheric conditions that are not exceeded 95 percent of the time and provide an upper bound on the atmospheric conditions that would exist during an accident.
air quality	The cleanliness of the air as measured by the levels of pollutants relative to standards or guideline levels established to protect human health and welfare. Air quality is often expressed in terms of the pollutant for which concentrations are the highest percentage of a standard (e.g., air quality may be unacceptable if the level of one pollutant is 150 percent of its standard, even if levels of other pollutants are well below their respective standards).
air-quality standards	The legally prescribed level of constituents in the outside air that cannot be exceeded during a specified time in a specified area.
background radiation	Radiation from (1) cosmic sources, (2) naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material), and (3) global fallout as it exists in the environment (e.g., from the testing of nuclear explosive devices).
Center	The Western New York Nuclear Service Center; the site abbreviation as used in this EIS.
characterization	The determination of waste composition and properties, whether by review of process knowledge, nondestructive examination or assay, or sampling and analysis, generally done for the purpose of determining appropriate storage, treatment, handling, transport, and disposal practices to meet regulatory requirements.
cloudshine	Direct external dose from the passing cloud of dispersed radioactive material.
collective dose	The sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation. Collective dose is expressed in units of person-rem or person-sievert.
concentration	The quantity of a substance in a unit quantity of a sample (for example, milligrams per liter or micrograms per kilogram).

contact-handled waste Radioactive waste or waste packages whose external dose rate is low enough to permit handling by humans during normal waste management activities. Also defined as transuranic waste with a surface dose rate not greater than 200 millirem per hour.

contamination Unwanted chemical elements, compounds, or radioactive material on structures, areas, environmental media, objects, or personnel.

criteria pollutant An air pollutant that is regulated by National Ambient Air Quality Standards (NAAQS). The Environmental Protection Agency must describe the characteristics and potential health and welfare effects that form the basis for setting, or revising, the standard for each regulated pollutant. Criteria pollutants currently are: sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and two size classes of particulate matter (less than 10 micrometers [0.0004 inch] in diameter and less than 2.5 micrometers [0.0001 inch] in diameter. New pollutants may be added to, or removed from, the list of criteria pollutants as more information becomes available. *Note: Sometimes pollutants regulated by state laws are also called criteria pollutants.*

cumulative impacts Impacts on the environment that result when the incremental impact of a proposed action is added to the impacts from other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

decommissioning Removing facilities such as processing plants, waste tanks, and burial grounds from service and reducing or stabilizing radioactive contamination. Includes the following concepts: the decontamination, dismantling, and return of an area to its original condition without restrictions on use or occupancy; partial decontamination, isolation of remaining residues, and continued surveillance and restrictions on use or occupancy.

decontamination The actions taken to reduce or remove substances that pose a substantial present or potential hazard to human health or the environment, such as radioactive contamination from facilities, soil, or equipment by washing, chemical action, mechanical cleaning, or other techniques.

dermal Relating to the skin.

disposal Emplacement of waste so as to ensure isolation from the biosphere without maintenance and with no intent of retrieval, and requiring deliberate action to gain access after emplacement.

disposal area A place for burying unwanted (that is, radioactive) materials in which the earth acts as a receptacle to prevent the dispersion of wastes in the environment and the escape of radiation.

disposal facility A man-made structure in which waste is disposed.

DOE orders Requirements internal to the U.S. Department of Energy (DOE) that establish DOE policy and procedures, including those for compliance with applicable laws.

dose (radiological) A generic term meaning absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or committed equivalent dose, as defined in the *Glossary of Terms Used in DOE NEPA Documents* (September 1998).

endangered species Plants or animals that are in danger of extinction through all or a significant portion of their ranges and that have been listed as endangered by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service following procedures outlined in the Endangered Species Act and its implementing regulations (50 CFR 424). *Note: Some states also list species as endangered. Thus, in certain cases, a state definition would also be appropriate.*

environmental impact statement (EIS) The detailed written statement that is required by section 102(2)(C) of the National Environmental Policy Act (NEPA) for a proposed major federal action significantly affecting the quality of the human environment. A DOE EIS is prepared in accordance with applicable regulations in 40 CFR 1500-1508, and the Department of Energy NEPA regulations in 10 CFR Part 1021.

The statement includes, among other information, discussions of the environmental impacts of the proposed action and all reasonable alternatives, adverse environmental effects that can not be avoided should the proposal be implemented, the relationship between short-term uses of the human environment and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources.

environmental justice The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and Tribal programs and policies. Executive Order 12898 directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing disproportionately high and adverse effects of agency programs, policies, and activities on minority and low-income populations.

exposure	The condition of being subject to the effects or acquiring a dose of a potential stressor such as a hazardous chemical agent or ionizing radiation; also, the process by which an organism acquires a dose of a chemical such as mercury or a physical agent such as ionizing radiation. Exposure can be quantified as the amount of the agent available at various boundaries of the organism (e.g., skin, lungs, gut) and available for absorption.
FONSI (Finding of no significant impact)	A public document issued by a federal agency briefly presenting the reasons why an action for which the agency has prepared an environmental assessment has no potential to have a significant effect on the human environment and, thus, will not require preparation of an environmental impact statement. [See environmental impact statement.]
geologic repository	A system that is intended to be used for, or may be used for, the disposal of radioactive waste or spent nuclear fuel in excavated geologic media. A geologic repository includes (a) the geologic repository operations area, and (b) the portion of the geologic setting that provides isolation. A near-surface disposal area is not a geologic repository.
groundwater	Water below the ground surface in a zone of saturation. Subsurface water is all water that exists in the interstices of soil, rocks, and sediment below the land surface, including soil moisture, capillary fringe water, and groundwater. That part of subsurface water in interstices completely saturated with water is called groundwater.
groundshine	Direct external dose from radioactive material that has deposited on the ground after being dispersed from the accident site.
hazardous waste	A category of waste regulated under the Resource Conservation and Recovery Act (RCRA). To be considered hazardous, a waste must be a solid waste under RCRA and must exhibit at least one of four characteristics described in 40 CFR 261.20 through 40 CFR 261.24 (i.e., ignitability, corrosivity, reactivity, or toxicity) or be specifically listed by the Environmental Protection Agency in 40 CFR 261.31 through 40 CFR 261.33. Source, special nuclear, or by-product materials as defined by the Atomic Energy Act are not hazardous waste because they are not solid waste under RCRA. (See Resource Conservation and Recovery Act and waste characterization.)
high-efficiency particulate air filter (HEPA)	An air filter capable of removing at least 99.97 percent of particles 0.3 micrometers (about 0.00001 inch) in diameter. These filers include a pleated fibrous medium (typically fiberglass) capable of capturing very small particles.

high-level (radioactive) waste (HLW)	Defined by statute (the Nuclear Waste Policy Act) to mean the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products nuclides in sufficient concentrations; and other highly radioactive material that the U.S. Nuclear Regulatory Commission (NRC), consistent with existing law, determines by rule requires permanent isolation. The NRC has not defined "sufficient concentrations" of fission products or identified "other highly radioactive material that requires permanent isolation." The NRC defines high-level radioactive waste (HLW) to mean irradiated (spent) reactor fuel, as well as liquid waste resulting from the operation of the first cycle solvent extraction system, the concentrated wastes from subsequent extraction cycles in a facility for reprocessing irradiated reactor fuel, and solids into which such liquid wastes have been converted.
involved worker	Worker who would participate in a proposed action.
latent cancer fatality (LCF)	Deaths from cancer resulting from, and occurring some time after, exposure to ionizing radiation or other carcinogens.
Low-income population	Low-income populations, defined in terms of Bureau of the Census annual statistical poverty levels (Current Population Reports, Series P-60 on Income and Poverty), may consist of groups or individuals who live in geographic proximity to one another or who are geographically dispersed or transient (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect. (See environmental justice.)
low-level (radioactive) waste (LLW)	Radioactive waste that is not high-level waste, transuranic waste, spent nuclear fuel, or by-product tailings from processing of uranium or thorium ore. (See radioactive waste.)
maximally exposed individual (MEI)	A hypothetical individual whose location and habits result in the highest total radiological or chemical exposure (and thus dose) from a particular source for all exposure routes (e.g., inhalation, ingestion, direct exposure).
millirem	One-thousandth of a rem (Also see *rem*).
mitigative measures	Those actions that avoid impacts altogether, minimized impacts, rectify impacts, reduce or eliminate impacts, or compensate for the impact.
mixed waste	Waste that contains both hazardous waste, as defined under the Resource Conservation and Recovery Act, and source, special nuclear, or by-product material subject to the Atomic Energy Act.

NAAQS (National Ambient Air Quality Standards)	Standards defining the highest allowable levels of certain pollutants in the ambient air (i.e., the outdoor air to which the public has access). Because the Environmental Protection Agency must establish the criteria for setting these standards, the regulated pollutants are called *criteria* pollutants. Criteria pollutants include sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and two size classes of particulate matter, less than 10 micrometers (0.0004 inch) in diameter, and less than 2.5 micrometers (0.0001 inch) in diameter. Primary standards are established to protect public health; secondary standards are established to protect public welfare (e.g., visibility, crops, animals, buildings). (See criteria pollutant.)
NEPA (National Environmental Policy Act of 1969)	NEPA is the basic national charter for protection of the environment. It establishes policy, sets goals (in Section 101), and provides means (in Section 102) for carrying out the policy. Section 102(2) contains "action-enforcing" provisions to ensure that federal agencies follow the letter and spirit of the Act. For major federal actions significantly affecting the quality of the human environment, Section 102(2)(C) of NEPA requires federal agencies to prepare a detailed statement that includes the environmental impacts of the proposed action and other specified information.
NESHAPs (National Emissions Standards for Hazardous Air Pollutants)	Emissions standards set by the Environmental Protection Agency for air pollutants which are not covered by the Nation Ambient Air Quality Standards (NAAQS) and which may, at sufficiently high levels, cause increased fatalities, irreversible health effects, or incapacitating illness. These standards are given in 40 CFR Parts 61 and 63. NESHAPs are given for many specific categories of sources (e.g., equipment leaks, industrial process cooling towers, dry cleaning facilities, petroleum refineries).
noninvolved worker	A worker who would be on the site of an action but would not participate in the action. (See involved worker.)
occupational dose	Whole-body radiation dose received by workers participating in a given task.
person-rem	The unit of collective radiation dose applied to populations or groups of individuals (see collective dose); that is, a unit for expressing the dose when summed across all persons in a specified population or group. One person-rem equals 0.01 person-sieverts.
probability of occurrence	The chance that an accident might occur during the conduct of an activity.

radioactive waste	In general, waste that is managed for its radioactive content. Waste material that contains source, special nuclear, or by-product material is subject to regulation as radioactive waste under the Atomic Energy Act. Also, waste material that contains accelerator-produced radioactive material or a high concentration of naturally occurring radioactive material may be considered radioactive waste.
radionuclide	An unstable isotope that undergoes spontaneous transformation, emitting radiation.
Record of Decision (ROD)	A concise public document that records a federal agency's decision(s) concerning a proposed action for which the agency has prepared an environmental impact statement (EIS). The ROD is prepared in accordance with the requirements of the Council on Environmental Quality NEPA regulations (40 CFR 1505.2). A ROD identifies the alternatives considered in reaching the decision, the environmentally preferable alternatives(s), factors balanced by the agency in making the decision, whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why they were not. [See environmental impact statement (EIS).]
release fraction	The fraction of the radioactivity that could be released to the atmosphere in a given accident.
rem	A unit of dose equivalent. The dose equivalent in rem equals the absorbed dose in rads in tissue multiplied by the appropriate quality factor and possibly other modifying factors. Derived from "roentgen equivalent man," referring to the dosage of ionizing radiation that will cause the same biological effect as one roentgen of X-ray or gamma-ray exposure. One rem equals 0.01 sievert.
remote-handled waste	Packaged waste whose external surface dose rate exceeds 200 millirem per hour.
repository	A permanent deep geologic disposal facility for high-level or transuranic wastes and spent nuclear fuel.
Resource Conservation and Recovery Act (RCRA)	A law that gives the Environmental Protection Agency the authority to control hazardous waste from "cradle to grave" (i.e., from the point of generation to the point of ultimate disposal), including its minimization, generation, transportation, treatment, storage, and disposal. RCRA also sets forth a framework for the management of non-hazardous solid wastes. (See hazardous waste.)

retrievable grout For this EIS, retrievable grout refers to a controlled low-strength material that provides for interim stabilization of the waste tanks. The grout material would be formulated to be sufficiently flexible to provide shielding and removable should DOE decide to remove the tanks in the future. The grout material would also provide sufficient structural stability and radionuclide retention should DOE decide to close the tanks in place. The exact formulation of this low-strength grout material would need to be developed and would be the subject of additional regulatory reviews before the interim stabilization action could be implemented.

risk The probability of a detrimental effect from exposure to a hazard. Risk is often expressed quantitatively as the probability of an adverse event occurring multiplied by the consequence of that event (i.e., the product of these two factors). However, separate presentation of probability and consequence is often more informative.

scientific notation A notation adopted by the scientific community to deal with very large and very small numbers by moving the decimal point to the right or left so that only one number above zero is to the left of the decimal point. Scientific notation uses a number times 10 and either a positive or negative exponent to show how many places to the left or right the decimal places has been moved. For example, in scientific notation, 120,000 would be written as 1.2×10^{5}, and 0.000012 would be written as 1.2×10^{-5}.

scoping An early and open process for determining the scope of issues to be addressed in an environmental impact statement (EIS) and for identifying the significant issues related to a proposed action.

The scoping period begins after publication in the Federal Register of a Notice of Intent (NOI) to prepare an EIS. The public scoping process is that portion of the process where the public is invited to participate. DOE also conducts an early internal scoping process for environmental assessments or EISs. For EISs, this internal scoping process precedes the public scoping process. DOE's scoping procedures are found in 10 CFR 1021.311.

source term The amount of a specific pollutant (e.g., chemical, radonuclide) emitted or discharged to a particular environmental medium (e.g., air, water) from a source or group of sources. It is usually expressed as a rate (i.e., amount per unit time).

stabilization Treatment of waste or a waste site to protect the biosphere from contamination.

storage (waste) The collection and containment of waste in a retrievable manner, requiring surveillance and institutional control, as not to constitute disposal.

surface water	All bodies of water on the surface of the earth and open to the atmosphere, such as rivers, lakes, reservoirs, ponds, seas, and estuaries.
thalweg	The line joining the deepest points of a stream channel, often used as a synonym for valley profile.
threatened species	Any plants or animals that are likely to become endangered species within the foreseeable future throughout all or a significant portion of their ranges and which have been listed as threatened by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service following the procedures set out in the Endangered Species Act and its implementing regulations (50 CFR 424). (See endangered species.)
transuranic (TRU) waste	Radioactive waste that is not classified as high-level radioactive waste and that contains more than 100 nanocuries (3700 becquerels) per gram of alpha-emitting transuranic isotopes with half-lives greater than 20 years.
TRUPACT-II	TRUPACT-II is the package designed to transport contact-handled transuranic waste to the Waste Isolation Pilot Plant site. It is a cylinder with a flat bottom and a domed top that is transported in the upright position. The major components of the TRUPACT-II are an inner, sealed, stainless steel containment vessel within an outer, sealed, stainless steel containment vessel. Each containment vessel is nonvented and capable of withstanding 345 kilopascals (50 pounds per square inch) of pressure. The inner containment vessel cavity is 1.8 meters (6 feet) in diameter and 2 meters (6.75 feet) tall, with a capability of transporting fourteen 0.21-cubic-meter (55-gallon) drums, two standard waste boxes, or one 10-drum overpack.
waste characterization	The identification of waste composition and properties by reviewing process knowledge, nondestructive examination, nondestructive assay, or sampling and analysis. Characterization provides the basis for determining appropriate storage, treatment, handling, transportation, and disposal methods to meet regulatory requirements.
worker	Any worker whose day-to-day activities are controlled by process safety management programs and a common emergency response plan associated with a facility or facility area. This definition includes any individual within a facility/facility area who would participate or support activities required for implementation of the alternatives.

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